

Documentation of the \LaTeX class

sapthesis.cls

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Abstract

This document describes how to use `sapthesis.cls`, a \LaTeX document class for the typesetting of the theses of the “Sapienza – University of Rome”. The official web page of `sapthesis` is

<http://biccari.altervista.org/c/informatica/latex/sapthesis.php>.

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1 Introduction

After several years in my faculty I noticed that usually students spend a lot of time to refine the aesthetic aspect of their \LaTeX documents instead of focusing on the content. This is against the philosophy of \LaTeX , which was created to relieve the writer from the typesetter's work. Apart from the time spent, the resulting documents are obviously all different from each other and good aesthetic results are not always achieved. This has a negative impact both on the student's work and on the university. Moreover in 2007 the Sapienza university changed completely its logo and a lot of strict graphic rules for official documents were introduced.¹

For these reasons I thought that a \LaTeX class for the theses of my university would have been a good idea. Sapthesis is the result of my work. To give a look to a document composed by sapthesis class see the file `sapthesis-example.pdf`. In that file the page layout and the layout choices are explained. Sapthesis is released under the terms of the latest version of the [\LaTeX Project Public License](#).

I would thank the Italian \TeX user group ([GuIT](#)) for the help provided, in particular Prof. Enrico Gregorio. I would thank also Dr. Gabriele Di Segni and Dr. Matteo Siccardi.

2 Requirements and installation

The simplest way to install sapthesis is by the package manager of your \TeX distribution (\TeX Live or MiK \TeX). For manual installation see the README file.

The sapthesis package provides: the `sapthesis.cls` class file; the documentation `sapthesis-doc.pdf` (this file) and its source code; the logos of Sapienza university; `sapthesis-example.pdf`, an usage example of the class and its source code; an English Bib \TeX style, called `sapthesis.bst`, which can be used, obviously, only if you use the Bib \TeX way to compose your bibliography and if your thesis is written in English (its usage is not mandatory).

Sapthesis explicetly loads the packages `xkeyval`, `geometry`, `ifxetex`, `xltxtra`, `fontenc`, `textcomp`, `lmodern`, `caption`, `graphicx`, `color`, `booktabs`, `amsmath`, `fancyhdr`, `emptypage`. It is highly recommended to not include these packages in the preamble of your document because already loaded by sapthesis.

¹A thesis is not an official document and therefore these guidelines can not be applied (private communication with Laura Gobbo, Ufficio Stampa e Comunicazione Sapienza – Università di Roma). However some Microsoft Word templates, with a completely different style, are provided. To give a look to the new Sapienza style see [Identità visiva](#).

3 Usage

A \LaTeX document based on `sapthesis` can be compiled only by the commands `pdflatex` and `xelatex`. In this manual only `pdflatex` will be considered.

As usual, in order to use this class you need to call it by

```
\documentclass[options]{sapthesis}
```

You have to specify the correct options for your case (see Sec. 3.1). Then you have to provide some fundamental information (title, author, etc. . .) by specific commands (see Sec. 3.2). Finally remember that it is important to follow a source code structure similar to those of the examples given in Sec. A and B. Especially the usage of the commands `\frontmatter`, `\mainmatter` and `\backmatter` is mandatory, otherwise the page style of the document will be wrong.

This class supports, at the moment, two languages: Italian and English. English is the default. If your thesis contains only English or very few paragraphs in another language, do not use the `babel` package because completely useless. Instead, if you write in Italian, load the `babel` package with the `italian` option: `\usepackage[italian]{babel}`.

3.1 Class options

These options can be passed in the `documentclass` command.

PhD, PhDA, PhDB The last two options are respectively for PhD theses in Physics and Mathematics. If your PhD is not in Physics or Mathematics, use the simple PhD option. (“Dottorato di ricerca”)

LaM Option to typeset a Laurea Magistrale thesis. (“Laurea Specialistica”)

Lau Option to typeset a Laurea thesis. (“Laurea Triennale”)

MasterP, MasterS Options to typeset a thesis for a First level master (“Master di primo livello”) and a Second level master (“Master di secondo livello”) respectively.

draft This is the usual draft option of the \LaTeX Standard Classes

oneside The usual oneside option of the \LaTeX Standard Classes

twoside (default) The usual twoside option of the \LaTeX Standard Classes

bn This option typesets the frontispiece in black and white (using the b/w logo, `marchiologo_nero_positivo.pdf`, instead of the colored one) and passes the `monochrome` option to `color` and `xcolor` packages.

binding=length (zero default binding) The value of this option is an offset of the the text column. It is useful to take in account the margin for the binding (ask to your bookbinder for information).

noexaminfo Remove the final exam informations.

italian or english Explicitly declare the language of the frontispiece. Useful when you want to write the frontispiece in a language and the thesis in a different language.

nodefaultfont To be documented.

romandiff See App. C.

3.2 Commands for the titlepage

As usual, the titlepage is generated by the `\maketitle` command. It needs some information that you can supply by the following commands in the preamble of the document.

\title{...} Mandatory.

\author{...} Mandatory

\IDnumber{...} Mandatory. Your ID number (*matricola* in italian)

\course[...]{...} Use Italian. Mandatory except for PhDA and PhDB options. The optional argument specifies the course name in another language, which is needed only in the case of PhD's.

\courseorganizer{...} Mandatory except for PhDA and PhDB options.

\cycle{...} Mandatory only for PhD's. Use the form: `\cycle{XXII}`

\submitdate{...} Mandatory. Use the form `\submitdate{April 2009}` for PhD's and the form `\submitdate{2009/2010}` for Laurea theses.

\copyyear{...} Mandatory. Copyright year (usually the year of your graduation).

\advisor{...} You must specify at least one advisor. If you have more than one advisor, put several advisor commands in the correct order:
`\advisor{Prof. Pippo} \advisor{Dr. Pluto}`

\coadvisor{...} Optional. Co-advisors of the thesis. Same syntax of the `\advisor` command.

\authoremail{...} Mandatory. Email of the thesis author. It is automatically hyper-linked if `hyperref` package is loaded.

\examdate{...} Optional. Date of the final exam. Use the form
`\examdate{16 February 2010}`.

\examiner{...} Optional. Specifies the members of the board of examiners of the final exam. Usage similar to `\advisor` command.

\versiondate{...} Optional. Date version of the thesis.

\website{...} Optional. Thesis website. Automatically hyper-linked if `hyperref` package is loaded.

\ISBN{...} Optional. ISBN

3.3 Other commands and environments

\dedication{...} A command to compose the dedication.

abstract An environment to compose the abstract of your document.

acknowledgments An environment to compose the acknowledgments of your document. This environment has an optional parameter to choose the title of the acknowledgments section. If you use a language for the acknowledgments different from that of the thesis, consider the `\selectlanguage{...}` command provided by the `babel` package.

The `sapthesis` class defines also the color `sapred` which is the *Sapienza red*: RGB(130,36,51). This color is switched to black if the `bn` option is in use. Example of usage: `...\textcolor{sapred}{blah blah blah}...`

4 Recommendations

- Do **not** change the default layout and do **not** use packages which can modify the layout of your thesis.
- As you already should know, L^AT_EX can process only document in pure ASCII. If you want to insert *directly* other characters, non included in the 128 ASCII characters (for example accented letters), you have to use a particular text encoding for your source file. Then you have to “tell” to L^AT_EX which encoding you have chosen by the packages `inputenc` or `inputenx`.

However, if your thesis is in English, I suggest to avoid the use of a particular text encoding for the source code because you will insert non ASCII characters very seldom. For this reason it is better to write these characters by the usage of the L^AT_EX commands (for example `\'e` for the é letter), avoiding to load `inputenc` or `inputenx` package. This has another advantage, in fact your source file will be very portable.

- Respect the following thesis structure:
 - Title page (`\maketitle` command)
 - Dedication (`\dedication` command)
 - Abstract (`abstract` environment)
 - Acknowledgements (`acknowledgments` environment)
 - Table of contents (`\tableofcontents` command)
 - Chapters
 - Appendices
 - Bibliography
- It is recommended to avoid or limit the acknowledgments in a thesis, it is not very professional. The dedication should be enough.
- Do not put any preface in your thesis. The preface should be written only by an eminent expert in the field to comment exceptionally important results of the student.
- Usually tables and figures are centered. Remember that, according to the typographic rules, *the table captions should be placed above the table*, whereas the figure caption should be placed below the figure.

- If the figure has a small width, it is possible to put the figure caption aside the figure using the `sidecap` package (not preloaded in `sapthesis.cls`).
- Avoid the use of colors unless really necessary. Remember that the figures should be readable even if they are printed in gray scale!
- Subscripts and superscripts should be in italic if they represent variable quantities, whereas should be in roman if they are simply labels.
- The name of operators should be typed in roman. Example: use `\sin` instead of *sin*.
- The margin notes are rarely used in scientific documents and *should not be used in a thesis*.
- Do not divide the bibliography per chapter unless it is really necessary. This will save you from wasting a lot of time to prepare your \LaTeX source code. Order your bibliography alphabetically according to the first author surname: this order is very useful, contrary to the other typical order, the citation order. In this regard I recommend the usage of the `backref` package.

References

Many people want to (or are compelled to) write in \LaTeX without studying a basic manual. Here follows a brief list of documents, especially useful for italian students.

- [1] L. PANTIERI & T. GORDINI, *L'arte di scrivere con \LaTeX* , (2011)
- [2] S. PAKIN, *The comprehensive \LaTeX symbol list*, (2008)
- [3] E. GREGORIO, *\LaTeX : breve guida ai pacchetti di uso più comune*, (2009)

A PhD thesis example

```
\documentclass[binding=0.6cm,PhD]{sapthesis}

\usepackage{microtype}
\usepackage{hyperref}
\hypersetup{pdftitle={My thesis},pdfauthor={Francesco Biccari}}

\title{My thesis}
\author{Francesco Biccari}
\IDnumber{123456}
\course[Philology]{Filologia}
\courseorganizer{Scuola di Dottorato in Scienze Filologiche}
\cycle{XXII}
\submitdate{October 2009}
\copyyear{2009}
\advisor{Prof. Caio}
\advisor{Dr. Sempronio}
\authoremail{pippo@pippo.com}

\begin{document}

\frontmatter
\maketitle
\dedication{Dedicated to\\ Donald Knuth}

\begin{abstract}
This thesis deals with myself.
\end{abstract}

\tableofcontents

\mainmatter
\chapter{Introduction}
...

\backmatter
\cleardoublepage
\phantomsection % Give this command only if hyperref is loaded
\addcontentsline{toc}{chapter}{\bibname}
% Here put the code for the bibliography. You can use BibTeX or
% the BibLaTeX package or the simple environment thebibliography.

\end{document}
```


B Laurea (Magistrale) thesis example

```
\documentclass[binding=0.6cm,Lau]{sapthesis} % LaM for a Laurea Magistrale

\usepackage{microtype}
\usepackage[italian]{babel}
\usepackage[utf8]{inputenx}
\usepackage{hyperref}
\hypersetup{pdftitle={La mia tesi},pdfauthor={Francesco Biccari}}

\title{La mia tesi}
\author{Francesco Biccari}
\IDnumber{123456}
\course{Fisica}
\courseorganizer{Facoltà di Scienze Matematiche, Fisiche e Naturali}
\submitdate{2011/2012}
\copyyear{2012}
\advisor{Prof. Caio}
\advisor{Dr. Sempronio}
\authoremail{pippo@pippo.com}

\begin{document}

\frontmatter
\maketitle
\dedication{Dedicato a\\ Donald Knuth}

\begin{abstract}
Questa tesi parla di me.
\end{abstract}

\tableofcontents

\mainmatter
\chapter{Introduzione}
...

\backmatter
\cleardoublepage
\phantomsection % Give this command only if hyperref is loaded
\addcontentsline{toc}{\chapter}{\bibname}
% Here put the code for the bibliography. You can use BibTeX or
% the BibLaTeX package or the simple environment thebibliography.

\end{document}
```

C Other useful commands

`\eu` Napier's number, e, in roman.

`\iu` Imaginary unit, i, in roman.

`\der[...]{...}{...}` Derivative. The optional parameter is the order of the derivative. The following two arguments are the numerator and the denominator. The differential symbol is automatically inserted.

`\pder[...]{...}{...}` Partial derivative. Same as above

`\rb{...}` Roman suBscript

`\rp{...}` Roman suPerscript

`\tb{...}` Text suBscript

`\tp{...}` Text suPerscript

`\un{...}` Useful command to typeset measurement units in the correct way, e.g. `25\un{m/s}`, `13\un{kg\,cm^{-3}}`. It can be used both inside or outside the math environment. For heavy usage of measurement units and to insert numbers in the form $1.4e-5$, the package `siunitx` is recommended.

`\mnote{...}` Fancy margin notes

`\g` Shortcut for the `\degree` command. Example: `45\g` produces 45° .

`\C` Shortcut for the `\celsius` command. Example: `37\,``\C` produces 37°C . (Not available in math mode compiling with `xelatex`).

`\A` Angstrom. Example: `10\,``\A` produces 10 \AA .

`\micro` Micro prefix. Example: `7\,``\micro` m produces $7\text{ }\mu\text{m}$.

`\ohm` Ohm. Example: `100\,``\ohm` produces $100\text{ }\Omega$.

`\di` Differential symbol with automatic spacing.

Example: `\int x \di x` produces $\int x dx$. If you prefer the differential symbol in roman (d) you can give the option `romandiff` in the document class options.

`\x` Shortcut for the `\times` command. E.g.: `\$ \x 10^5 \$` produces 7×10^5 .